

REMARKS

I. Claim Status

Claims 1-42 are pending. Claims 1-10 and 19-36 were subject to restriction and have been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuing application.

Claims 11 and 13-18 have also been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuing application.

Claim 12 has been amended to read “A nickel-based wrought alloy...” Support for this amendment comes from the specification as filed at Experiment 2 on page 18. Experiment 2 reads in part:

“starting materials were **melted and cast** in an ordinary high-frequency induction furnace, thereby producing 12 mm thick ingots of the ingredient * * *, while maintaining the temperature within a range of 1000 to 1230°C, the ingots were reduced to a final thickness of 5 mm by **hot rolling** at a thickness reduction rate of 1 mm per pass.” (emphasis added)

The Experiment describes producing a wrought nickel alloy via melting and by hot rolling. The term “wrought alloy” is a term of art which describes the hot or cold deformation of an alloy by

processes such as rolling, extruding, drawing, forging, etc. It is therefore asserted that the term “wrought” is inherently disclosed within the specification.

New claims 43-45 have been added. New claim 43 describes a wrought product, which is produced by melting, casting and hot-rolling the nickel-base alloy according to Claim 12. New claim 44 is supported by original claims 37-42. New claim 45 is supported by Example 22 (Mo = 0.90%) of the present specification.

II. Objection to Drawings

Concurrent with this filing is a corrected Figure 1 marked as “Prior Art” and as “Replacement Sheet” in compliance with MPEP § 608.02(g), 37 C.F.R. 1.121(d) and 37 C.F.R. 1.84(c). Applicants respectfully request reconsideration of this objection.

III. Election/Restrictions

Applicants confirm the election made on June 26, 2007 to the invention of Group II claims 11-18 and 37-42. Claims 1-10 and 14-36 have been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuation.

IV. Claim Rejections

a) 35 U.S.C. § 103(a)

Claims 11, 13-15 and 17-18 have been rejected as obvious in view of EP 0303957. Without conceding the correctness of the Examiner's position on the need for amendment, claims 11, 13-15 and 17-18 have been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuing application. Applicants respectfully request reconsideration and withdrawal of this rejection.

Claims 11-13, 15, 16, 37, 39 and 40 stand rejected as obvious in view of WO 97/43457 (" '457 "). The Examiner contends that '457 discloses a hanger made from a nickel base alloy with a composition overlapping the instant claimed ranges. The Examiner contends that with respect to claims 11 and 12, the compositions allegedly disclosed by '457 overlap the instant claimed ranges. The Examiner concludes that a *prima facie* case of obviousness exists because it would have been obvious to include between 43 and 50% Cr in the alloy of '457 since '457 discloses equal utility over the broader range of 38-75%. Applicants respectfully traverse.

Claims 11, 13, 15, 16, and 37 have been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuing application. Claims 39 and 40 depend from claim 12. Without conceding the correctness of the Examiner's position or the need for amendment, claim 12 has been amended to add the term "A nickel-base wrought alloy...".

The '457 patent discloses at claim 1:

A hanger...from the combustion products, is made of a hot-corrosion-resistant material containing nickel and chromium, characterized in that the corrosion-resistant material is made of **particulate starting material**, which by a **HIP process** has been unified to a coherent material substantially **without melting** of the starting material.... (emphasis added)

The HIP process is a hot-isostatic-pressing process wherein particles are sintered while being pressed isotropically under the condition of a high temperature.

It is not necessary in the present invention to use such a particulate starting material disclosed in '457 or HIP process. '457 discloses in Claim 1 that 38 to 75% Cr is contained in the alloy. Such a content of Cr exceeding 50% can be used without difficulties in processing in a HIP process. However, the use of Cr exceeding 50% is unpreferable from the viewpoint of ease of processing in general, when a method including a melting step, a casting step and a hot-rolling step of an alloy is conducted to form a wrought product. A wrought alloy is not subjected to such a HIP process generally wherein even a melting step of materials is not conducted.

Claims 12, 37-39, 41 and 42 stand rejected as being obvious over EP 0 303 957 (" '957 ") in view of '457. The Examiner contends that '957 discloses that 0.3 wt% or less Fe may be included as impurity which overlaps the claimed range of between 0.05 to 1.0 wt%, and is therefore *prima*

facie obvious. The Examiner does admit that '957 does not disclose the inclusion of between 0.01 to 0.1 wt% Si. The Examiner further contends that '457 allegedly discloses that up to 0.95 wt% Si can be beneficially added to improve corrosion resistance. The Examiner concludes it would have been obvious to add up to 0.95 wt% Si as taught by '457 to the alloy of '957, to improve corrosion resistance as allegedly taught by '457 and as desired in '957. Applicants respectfully traverse.

Applicants contend that the Examiner is improperly using hindsight to reconstruct the invention. Additionally, '957 does not disclose the presence of 0.01 to 0.1% Si, unlike the instant claim 12. The Examiner states '457 "discloses that up to 0.95 wt% Si can be beneficially added to improve corrosion resistance", and, "it would have been obvious to one of ordinary skill in the art at the time the invention was made to add up to 0.95 wt% Si as taught by '457 to the alloy of '957 to improve corrosion resistance as taught by '457 and desired by '957." However, the process for producing a product is fundamentally different: the category of the process is different between the present invention and '457. That is, in general, a product produced by a process is not the same with a product produced by another process included in a different process category. In the present invention, Si is added in order to enhance the strength of the alloy, and if Si is added in excess of 0.1%, the leaching of metal ions in an environment for forming a polymer electrolyte fuel cell increases unpreferably. '457 discloses a large content of Si such as 0.95%. When such a large amount of Si is included in the Ni alloy of a polymer electrolyte fuel cell, corrosion resistance deteriorates greatly.

Further, '457 discloses a powder metallurgy process, although the Ni alloy of the present invention is produced by a process including melting, casting, and hot-rolling the alloy. Such a powder metallurgy process is not used for a nickel-base wrought alloy of the present invention.

Thus, the combined teachings or suggestions of '957 with '457 do not render claim 12 obvious, because '457 and '957 fail to teach, suggest or provide a motivation to make a nickel-base wrought alloy comprising, by mass, more than 43% and not more than 50% chromium, 0.1 to 2% molybdenum, 0.001 to 0.05% magnesium, 0.001 to 0.04% nitrogen, 0.05 to 0.5% manganese, and 0.01 to 0.1% silicon, with the balance being nickel and inadvertent impurities, the amount of carbon included in the alloy as inadvertent impurities being not more than 0.05%; a wrought product produced by melting, casting and hot-rolling the nickel-base wrought alloy; and a structural member, a manifold member, a pipe member, a fastener member, a support plate member and a separator member of a polymer electrolyte fuel cell produced by melting, casting and hot-rolling the nickel-base wrought alloy.

b) Non-Statutory Obviousness-Type Double Patenting

Claims 11 and 12 are provisionally rejected on the grounds on non-statutory obviousness-type double patenting in view of claims 1 and 2 of co-pending application 10/501100. Claim 11 has been cancelled without prejudice or disclaimer and retaining the right to represent in a subsequent divisional or continuing application. Upon the allowance of the instant claim 12,

Applicants will file a terminal disclaimer in compliance with 37 C.F.R. 1.321(c) or (d). Applicants respectfully request reconsideration and provisional withdrawal of this rejection.

CONCLUSION

In view of the foregoing amendments and remarks, applicant believes the pending application is in condition for allowance, and earnestly solicits same.

The Commissioner is hereby authorized and requested to either refund any overpayment of fees, or charge any deficiency in fees up to a maximum of \$300, to Darby and Darby Deposit Account No. 04-0100.

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Respectfully submitted,

By 

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